

FIG. 1 (PRIOR ART)

| | | | | | | | | | | | |
|----------|-----|---------|---------|---------|-----|--------|--------|--------|----|----|----|
| b63 | ... | b24 | b23 | b22 | b21 | b20 | ... | b3 | b2 | b1 | b0 |
| Reserved | | Group23 | Group22 | Group21 | ... | Group2 | Group1 | Group0 | | | |

FIG. 2

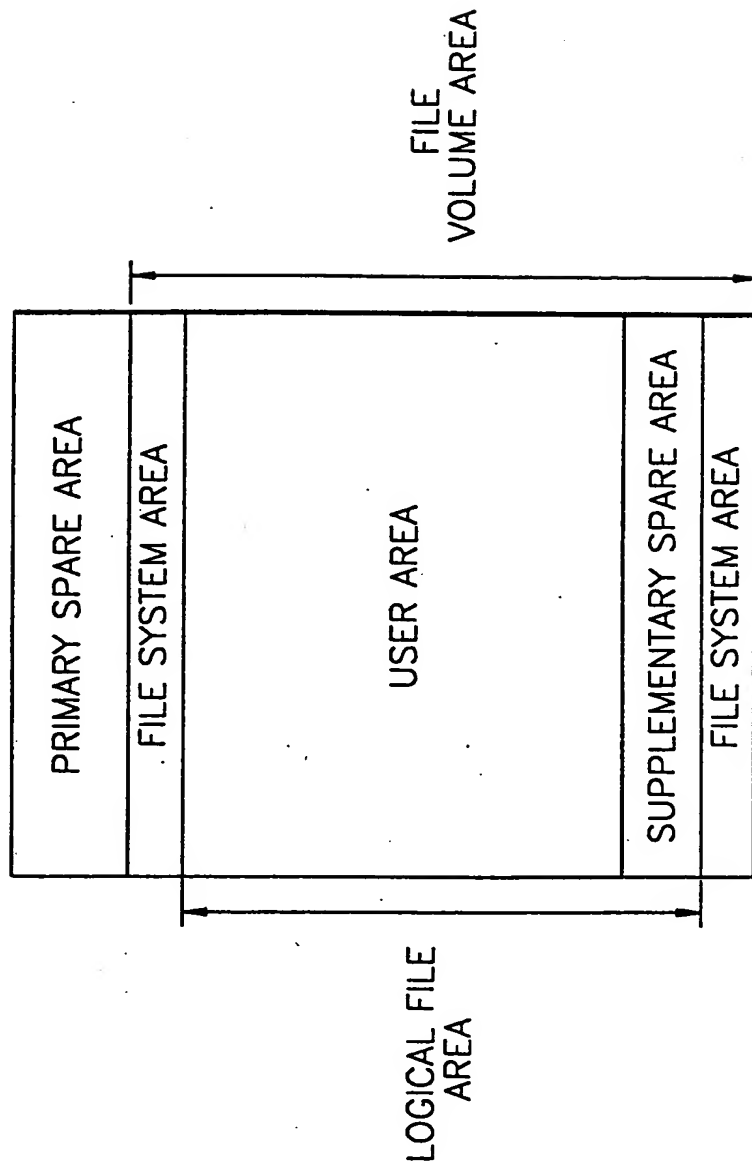


FIG. 3A

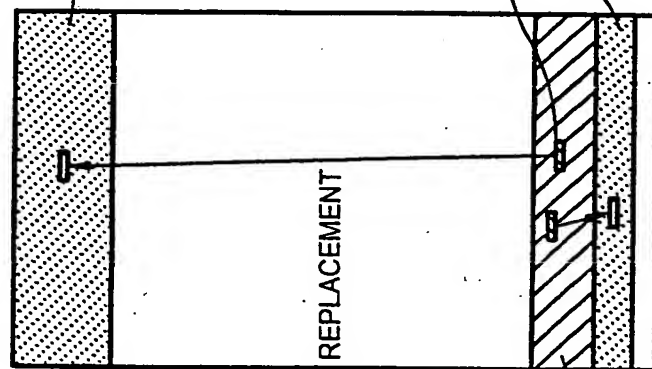
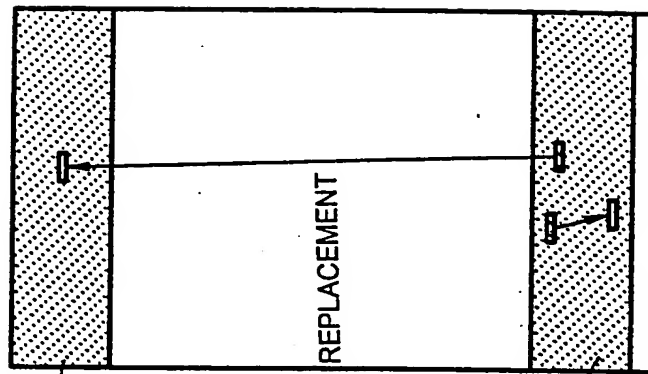


FIG. 3B



AREA WHICH IS NOT ALLOCATED AS
SUPPLEMENTARY SPARE AREA BUT
HAS BEEN USED AS USER DATA AREA

FIG. 4A

32K BUFFER MEMORY MODEL

| Number of PDL Entries | Max. no. of SDL Entries | Min. Alloc. | Min. Required Spare area(32K) | | | Total no. of defects | Recommended spare area | | | |
|--------------------------|-------------------------------|----------------|----------------------------------|-------|-----|----------------------------|---------------------------|--------|------|-----|
| | | | Blocks | MB | % | | +32BLK | +48BLK | | |
| 0 – 511 | 3837 | 320 | 3901 | 127.8 | 2.7 | 4348 | 4096 | 2.8 | 4096 | 2.8 |
| 512 – 1023 | 3581 | 352 | 3677 | 120.5 | 2.5 | 4604 | 3872 | 2.7 | 3888 | 2.7 |
| 1024 – 1535 | 3325 | 384 | 3453 | 113.1 | 2.4 | 4860 | 3648 | 2.5 | 3680 | 2.5 |
| 1536 – 2047 | 3069 | 416 | 3229 | 105.8 | 2.2 | 5116 | 3424 | 2.4 | 3472 | 2.4 |
| 2048 – 2559 | 2813 | 448 | 3005 | 98.5 | 2.1 | 5372 | 3200 | 2.2 | 3264 | 2.3 |
| 2560 – 3071 | 2557 | 480 | 2781 | 91.1 | 1.9 | 5628 | 2976 | 2.1 | 3056 | 2.1 |
| 3072 – 3583 | 2301 | 512 | 2557 | 83.8 | 1.8 | 5884 | 2752 | 1.9 | 2848 | 2.0 |
| 3584 – 4095 | 2045 | 544 | 2333 | 76.4 | 1.6 | 6140 | 2528 | 1.7 | 2640 | 1.8 |
| 4096 – 4607 | 1789 | 576 | 2109 | 69.1 | 1.5 | 6396 | 2304 | 1.6 | 2432 | 1.7 |
| 4608 – 5119 | 1533 | 608 | 1885 | 61.8 | 1.3 | 6652 | 2080 | 1.4 | 2224 | 1.5 |
| 5120 – 5631 | 1277 | 640 | 1661 | 54.4 | 1.1 | 6908 | 1856 | 1.3 | 2016 | 1.4 |
| 5632 – 6143 | 1021 | 672 | 1437 | 47.1 | 1.0 | 7164 | 1632 | 1.1 | 1808 | 1.3 |
| 6144 – 6655 | 765 | 704 | 1213 | 39.7 | 0.8 | 7420 | 1408 | 1.0 | 1600 | 1.1 |
| 6656 – 7167 | 509 | 736 | 989 | 32.4 | 0.7 | 7676 | 1184 | 0.8 | 1392 | 1.0 |
| 7168 – 7679 | 253 | 768 | 765 | 25.1 | 0.5 | 7932 | 960 | 0.7 | 1184 | 0.8 |

FIG. 4B

64K BUFFER MEMORY MODEL

| Number of PDL Entries | Max. no. of SDL Entries | Min. Alloc. | Min. Required Spare area(64K) | | | Total no. of defects | Recommended spare area | | | |
|--------------------------|-------------------------------|----------------|----------------------------------|-------|-----|----------------------------|---------------------------|--------|------|-----|
| | | | Blocks | MB | % | | +32BLK | +48BLK | | |
| | | | | | | | | | | |
| 0 – 511 | 3837 | 320 | 3901 | 127.8 | 2.7 | 4348 | 4096 | 2.8 | 4096 | 2.8 |
| 512 – 1023 | 3837 | 352 | 3933 | 128.9 | 2.7 | 4860 | 4128 | 2.9 | 3888 | 2.9 |
| 1024 – 1535 | 3837 | 384 | 3965 | 129.9 | 2.7 | 5372 | 4160 | 2.9 | 3680 | 2.9 |
| 1536 – 2047 | 3837 | 416 | 3997 | 131.0 | 2.8 | 5884 | 4192 | 2.9 | 3472 | 2.9 |
| 2048 – 2559 | 3837 | 448 | 4029 | 132.0 | 2.8 | 6396 | 4224 | 2.9 | 3264 | 3.0 |
| 2560 – 3071 | 3837 | 480 | 4061 | 133.1 | 2.8 | 6908 | 4256 | 2.9 | 3056 | 3.0 |
| 3072 – 3583 | 3837 | 512 | 4093 | 134.1 | 2.8 | 7420 | 4288 | 3.0 | 2848 | 3.0 |
| 3584 – 4095 | 3837 | 544 | 4125 | 135.2 | 2.9 | 7932 | 4320 | 3.0 | 2640 | 3.1 |
| 4096 – 4607 | 3837 | 576 | 4157 | 136.2 | 2.9 | 8444 | 4352 | 3.0 | 2432 | 3.1 |
| 4608 – 5119 | 3837 | 608 | 4189 | 137.3 | 2.9 | 8956 | 4384 | 3.0 | 2224 | 3.1 |
| 5120 – 5631 | 3837 | 640 | 4221 | 138.3 | 2.9 | 9468 | 4416 | 3.1 | 2016 | 3.2 |
| 5632 – 6143 | 3837 | 672 | 4253 | 139.4 | 2.9 | 9980 | 4448 | 3.1 | 1808 | 3.2 |
| 6144 – 6655 | 3837 | 704 | 4285 | 140.4 | 3.0 | 10492 | 4480 | 3.1 | 1600 | 3.2 |
| 6656 – 7167 | 3837 | 736 | 4317 | 141.5 | 3.0 | 11004 | 4512 | 3.1 | 1392 | 3.3 |
| 7168 – 7679 | 3837 | 768 | 4349 | 142.5 | 3.0 | 11516 | 4544 | 3.1 | 1184 | 3.3 |

FIG. 5A

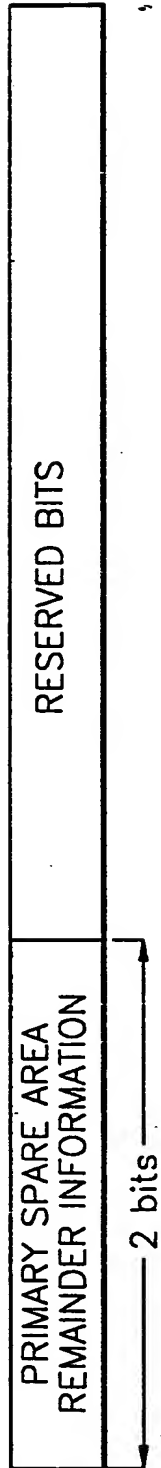


FIG. 5B

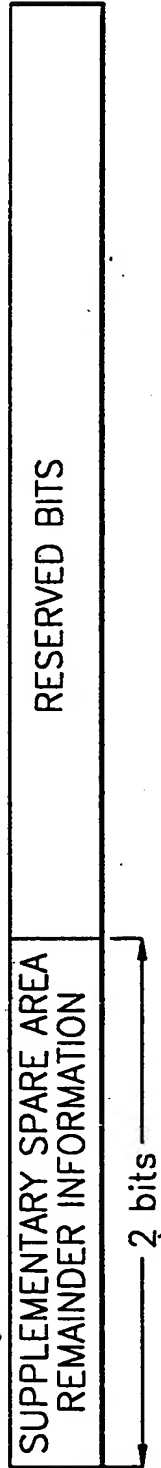


FIG. 6

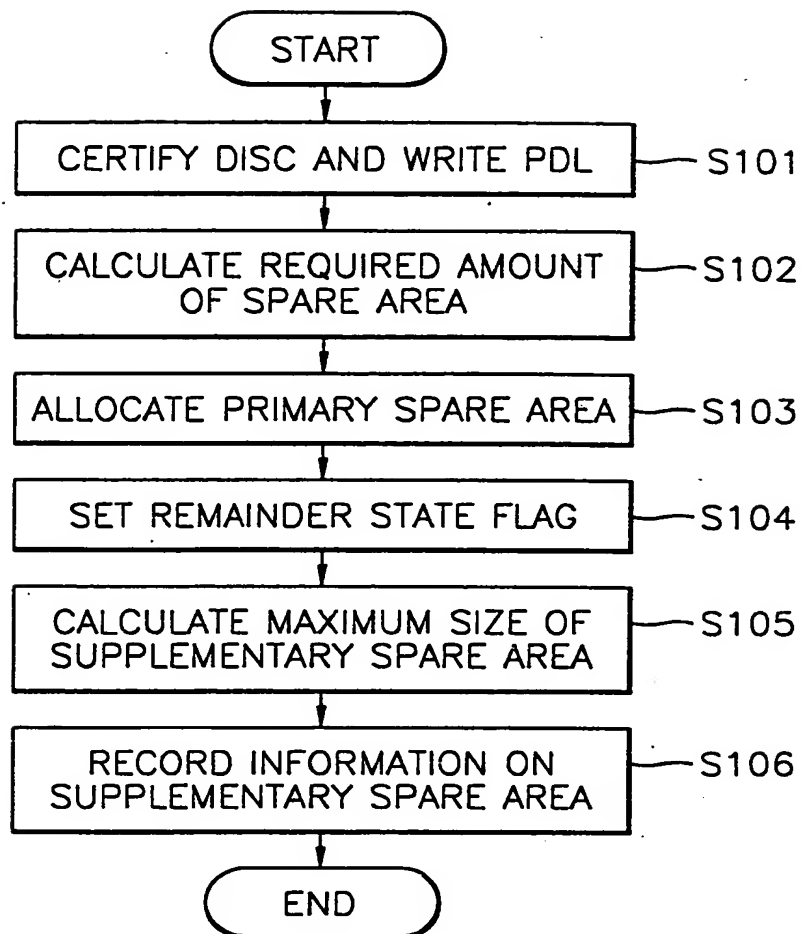


FIG. 7

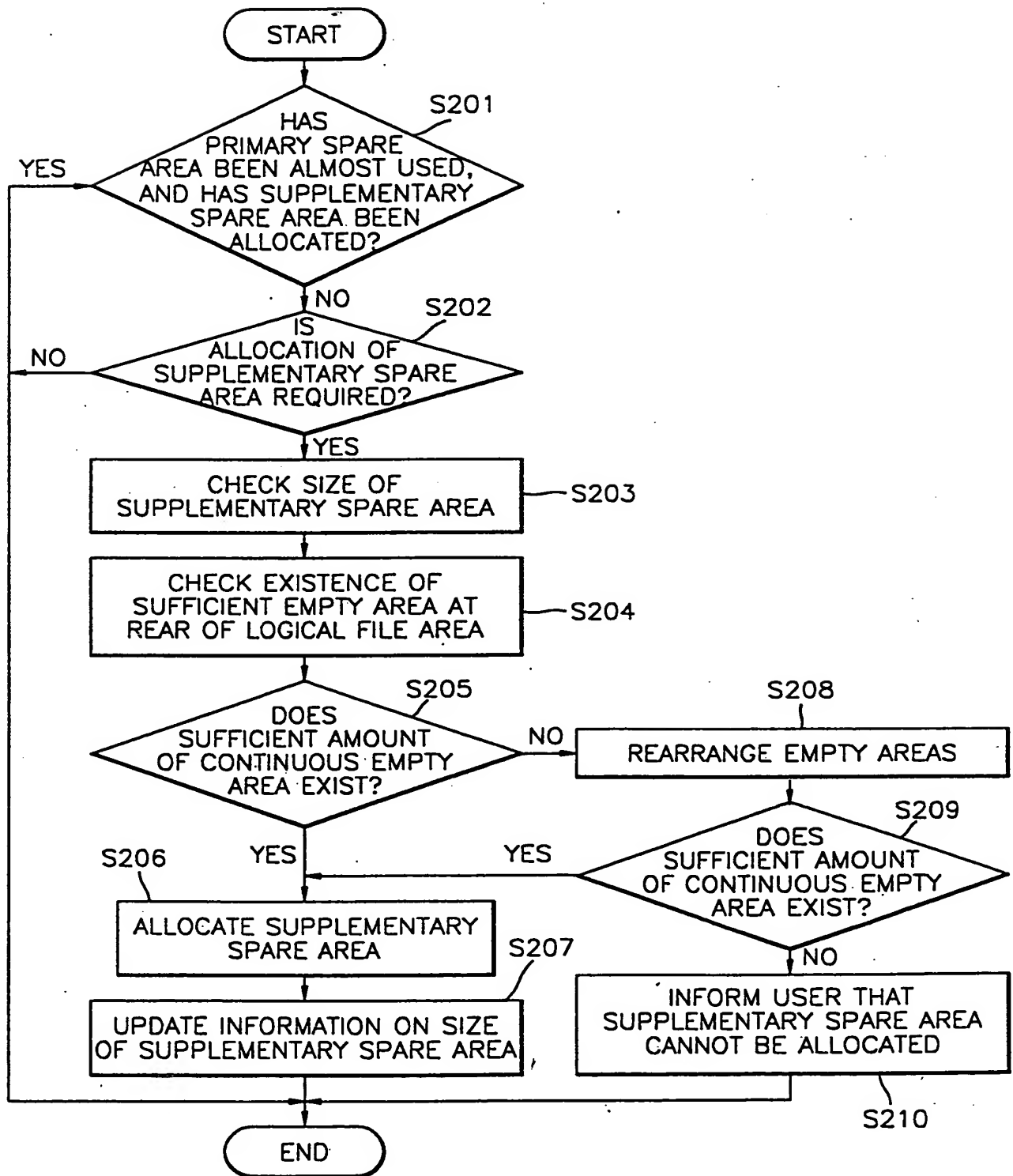


FIG. 8

